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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/678,266

10/06/2003

Alberto Morello

MORELLO1

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EXAMINER

SAWAGED, SARI S

ART UNIT

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4126

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DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/678,266	Applicant(s) MORELLO, ALBERTO	
	Examiner Sari Sawaged	Art Unit 4126	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10/6/2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

1. Acknowledgment is made of applicant's claim for priority under 35 U.S.C. 119(a)-(d) based upon an application (TO2002A000858) filed in Italy. It appears that there is an error however, because on the Bibliography Data Sheet a priority date of 11/04/2000 is listed and on the Oath and Declaration Sheet a priority date of 10/04/2002 is listed. Both dates refer to the same application TO2002A000858.

Applicant claims a priority date of 11/04/2000. A claim for priority under 35 U.S.C. 119(a)-(d) cannot be based on said application, since the United States application was filed more than twelve months thereafter. The applicant must submit evidence of any application the inventor wishes to claim priority of, including any supporting documents, in order to be able to claim priority of a date earlier than 10/06/2003.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dunn et al. (hereinafter referred to as Dunn) (6,154,772) in view of Young (6,011,950).

4. Regarding Claim 1, Dunn discloses a system for transmitting and receiving DVB/MPEG digital signals for satellite communication. Dunn acknowledges that the method of inserting null packets into a DVB/MPEG stream was known at the time so that the streams bit-rates are uniform (this is actually a standard for DVB video broadcasting as disclosed by the European Broadcast Union (see document TR 101 190 dated December 1997, sections 4.2.1.2 and 4.2.2)). Therefore, using a null packet inserter and eliminator is a known method/apparatus at the time.

Dunn discloses multiplexing DVB/MPEG streams into a single transport stream that is then applied to a modulating chain for transmission over a propagation channel. Dunn doesn't disclose an *ACM modulator/demodulator*, *quality of service evaluator*, or a *bit rate control circuit*. However, Young, an inventor from the same or a similar field, discloses using an ACM (see figure 3 and column 5 lines 42-52), a quality of service evaluator that uses the bit error rate (BER) to measure the quality of the signal (column 5 lines 42-52), and controlling the bit rate of the signal based on the bit error rate to get the best performance or "maximum ruggedness allowed" (bit rate control circuit equivalent) (see column 5 line 17 to column 6 line 60). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Dunn's invention with Young's because it would have increased the performance of the system as disclosed by Young (see column 5 lines 42-52).

5. Claims 2, 3, 4, 5, 6, 7, 8, 9, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dunn in view of Young, in even further view of Ono et al. (hereinafter referred to as Ono) (6,879,768).

6. Regarding claim 2, neither Dunn nor Young disclose introducing indications of the number and position of the eliminated null packets and using this information to restore the packets. However, Ono discloses introducing indications of the number and position of the eliminated null packets and using the indications to restore the null packets (see figures 3-5, column 1 lines 55-67, column 5 lines 18-35 and 60-67, column 6 lines 1-3). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the inventions of Dunn and Young with Ono's because it would have allowed the system to it would have enabled the system to maintain a constant reproducing bit rate without special control in reading data from the transmitting medium. It would also allow the system achieve a recording/reproduction with a minimum recording/transmission capacity, thereby saving wasted memory/bandwidth.

7. Regarding claims 3 and 5, Dunn discloses using a synchronization byte (see column 23 lines 52-53). Neither Dunn nor Young disclose that indications of the number and position of the eliminated null packets consist of a value incorporated in one of the nibbles of the synchronization byte of each DVB packet applied to the ACM modulator, where the value represents the number of null packets that have been deleted by the

null-packet eliminator before the DVB packet applied to the ACM modulator and after the previous DVB packet applied.

However, Ono discloses that the number and position of the eliminated null packets is incorporated in the sync byte. This number is used to reproduce the number of eliminated null packets (see figures 3-5 and column 5 line 22 to column 6 line 3). It would have been obvious to one of ordinary skill in the art to combine the inventions of Dunn, Young, and Ono because it would have allowed the system to it would have enabled the system to maintain a constant reproducing bit rate without special control in reading data from the transmitting medium. It would also allow the system achieve a recording/reproduction with a minimum recording/transmission capacity, thereby saving wasted memory/bandwidth.

8. Regarding claim 4, Ono discloses that number of eliminated null packets be in the range of 0-255 (see column 5 lines 13-35). Having a null packet number in the range of 0-15 is an obvious variant of the invention disclosed by Ono. Having the indications of number and position of the eliminated null packets appended to the DVB packets is also an obvious variant of the invention as disclosed by Ono.

9. Regarding claim 6, neither Dunn nor Young nor Ono specifically disclose using dummy frames to prevent buffer underflow. However, Dunn discloses using program clock reference (PCR) data to control the flow of data between the encoder and decoder in order to prevent buffer underflow at the decoder (see column 16 lines 19-21, column

24 lines 10-14). Using null packets to prevent buffer underflow is also a well-known method to one of ordinary skill at the time the invention was made. Using dummy frames instead of dummy (null) packets to keep a buffer from underflow is an obvious variation.

10. Regarding claim 7 and 8, neither Dunn nor Young disclose a null packet eliminator, however, Ono discloses the equivalent of the null packet eliminator. Ono discloses that when a PID transmitting packet corresponds to a null packet, the packet is diverted to a packet counter and the header of a selected packet is modified to incorporate the count reached by the counter (see figures 3 and 5, and column 5 lines 9-43).

Ono doesn't specifically disclose a FIFO buffer connected to the mux and the ACM modulator because Ono's invention deals more with the receiving side. However, Asynchronous FIFO buffers were readily used in such applications at the time the invention was made. An asynchronous FIFO connected between a mux and an ACM would have the "in rate" of the mux and the "out rate" of the ACM.

11. Regarding claim 9, Neither Dunn nor Young nor Ono specifically disclose that the counter on the transmitting side is clocked by the modulator symbol rate, however, Dunn discloses that the system is regulated by the data clock provided by the modulator (modem) at the transmitter (see column 28 lines 15-18). This data clock along with the FEC scheme that is used (as disclosed by Young (see column 5 line 17 to column 6 line

15) determines the symbol rate. Dunn also discloses that the clock at the receiver is regenerated from the data sync and the clock regeneration using the PCR (see column 16 lines 19-21, column 24 lines 10-14). Dunn further discloses a PCR incrementor (counter) at the transmitter that is used in adjusting the bit rate of the transmitter (see column 24 lines 42 to column 25 line 20). Having an ISCR comparator comparing values in the ISCR to recover the transmitter bit rate is an obvious variation of Dunn's invention.

12. Regarding claim 10, Dunn discloses a FIFO buffer for temporarily storing the received packets (see column 16 lines 32-35 and column 17 lines 34 to 39, and column 24 lines 39-41), Dunn doesn't specifically disclose a means to reading null packets because he replaces null packets with program data packets. Dunn only send a null packet at the end of video stream. Dunn discloses a 27 MHZ oscillator for generating the packet-retrieval rate of the reading means (see column 24 lines 24-33). Ono discloses an input/output buffer for temporarily storing received packets (see column 4 lines 35-36), a means for reading the null packets (see column 5 lines 60-67) and an oscillator for generating the packet-retrieval rate of the reading means (column 2 lines 11-13).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sari Sawaged whose telephone number is (571) 270-5085. The examiner can normally be reached on Mon-Thurs, 9:00AM-5:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Doon Chow can be reached on (571) 272-7767. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Dennis-Doon Chow/

Supervisory Patent Examiner, Art Unit 4126

/Sari Sawaged/

Examiner, Art Unit 4126